

Work Order ID 138396

138396

Page 1

Tuesday, October 27, 2015 11:27:42 AM

Item ID: 647.1701 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Skid Deflector Assembly
 Start Date: 10/26/2015 Start Qty: 5.00 *5* Cust Item ID:
 Required Date: 10/26/2015 Req'd Qty: 5.00 *5* Customer:
 Reference:

Approvals: Process Plan: MLS Date: OCT 29 2015 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
647.1700	D

110	Pick Kit	0.00
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110

Packaging Memo

NOV 24 2015

DAS
6
9-89

120

120

Small Fab Memo

- 1- Assemble item 4,6,7 and 8 as per dwg.
- 2- Clamp item 1 and 2 to item 3. Transfer drill holes as per dwg see note 6. Use clecos.
- 3- Disassemble parts
- 4- Deburr
- 5- Touch up expose aluminum with alodine
- 6- Re-assemble as per dwg

Sx

15/11/25 DAS
36
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : _____			
Misidentified ☐		Past Due ☐					

Quality Control

DQA: _____ Date: _____



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		OTHER : ☐							

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	Identify as per dwg & Stock Location: <u>CCK03</u>	0.00							
210									
Packaging	Memo	0.00							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								
220	QC21 - Final Inspection - Work Order Release	0.00							
220									
QC	Memo	0.01							
Quality Control									

5 DEC 17 2015

ML5 DEC 18 2015

ML5 DEC 18 2015
DEC 18 2015

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WORK ORDER NON-CONFORMANCE / UPDATE

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Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
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Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____							
Misidentified	☐	Past Due	☐								

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Parent Item: 647.1701

647 1701

Parent Item Name: Skid Deflector Assembly

Start Date: 10/26/2015

Required Date: 10/26/2015

Start Qty: 5.00

Required Qty: 5.00

Comments: IPP REV:A 12.10.04 NEW ISSUE DD VERF:JFS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
647.1710		Manufactured	No		44		Each	0.0000		5			
647 1710									**	136775			DAG 6 9-85
Plate													
647.1711		Manufactured	No				Each	1.0000		5			
647 1711									**	136263			DAG 6 9-85
Plate													
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				CCK045			1						
				132763			1						
647.1712		Manufactured	No				Each	1.0000		5			
647 1712									**	135512			DAG 6 9-85
Gusset													
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				MF 36			1						
				91800			1						
647.1713		Manufactured	No				Each	50.0000		5			
647 1713									**				DAG 6 9-85
Spacer													
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				CCK108			50						
				104845			36						
				91801			1						
				92561			1						
				93408			2						
				99057			10						

NOV 24 2015

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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Parent Item: 647.1701

647 1701

Parent Item Name: Skid Deflector Assembly

Start Date: 10/26/2015

Required Date: 10/26/2015

Start Qty: 5.00

Required Qty: 5.00

CR3213-4-4

Purchased

No

Each

352.0000

110

DAS

CR3213-4-4

6

Rivet, Cherry

Location

Loc Qty

Loc Code

CCK004

304

126282

304

110

ST319

48

M130388

48

Each

1,509.000

10

NOV 24 2015

NAS1149F0332P

Purchased

No

NAS1149F0332P

DAS

Washer

Location

Loc Qty

Loc Code

GA

162

122063

162

10

ST260a

636

m128401

6

m131026

80

m131697

50

m133284

500

st268

117

123900

7

m130388

86

m133077

24

ST288

594

m133134

594

NOV 24 2015

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Start Date: 10/26/2015

Required Date: 10/26/2015

Start Qty: 5.00

Required Qty: 5.00

MS21042-3 MS21042L3 Purchased No

Each 247.0000

5

MS21042-3

133498

Nut / use MS21042L3

Location

Loc Qty

Loc Code

ST305

247

M128770

10

M129541

15

M129682

199

M130388

23

Each

800.0000

5

MS27039-1-14

Purchased

No

MS27039-1-14

Screw

Location

Loc Qty

Loc Code

cck007a

700

124326

700

GA

94

120449

94

ST285

6

m130388

6

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Shop Packet Print

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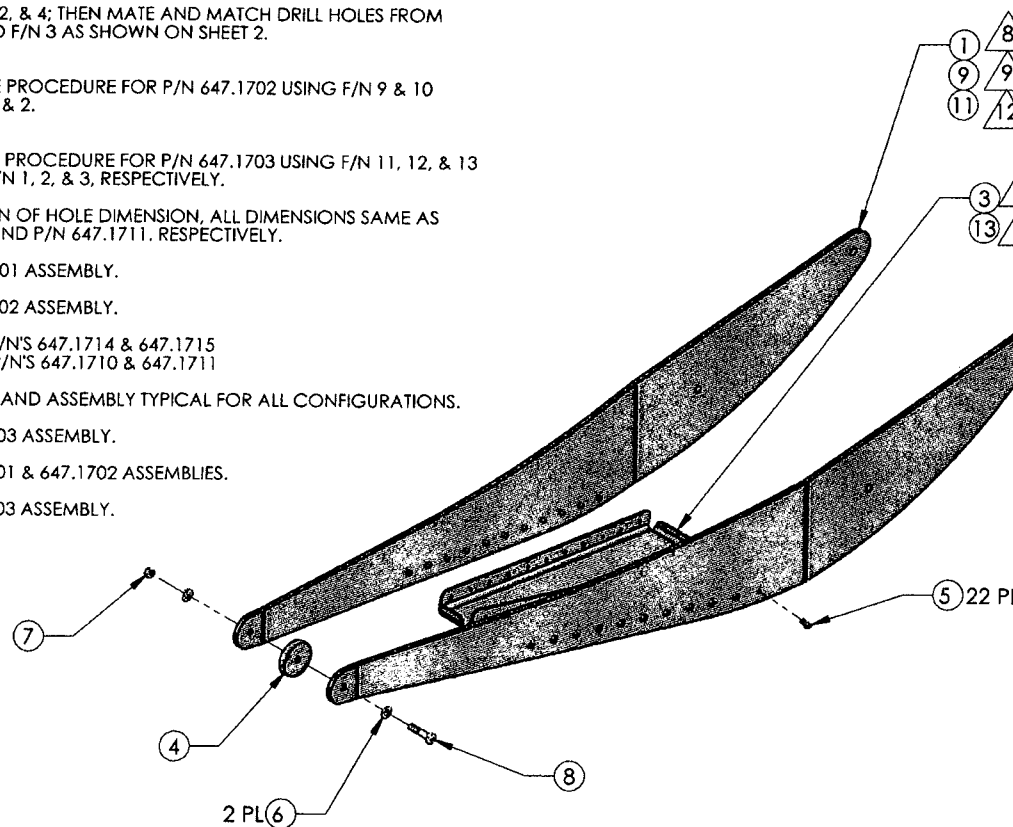
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Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

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NOTES:

- 1 MATERIAL: 7075-T6 ALUMINUM PER AMS-QQ-A-250/12.
- 2 MATERIAL: 6061-T6 ALUMINUM BAR IAW AMS-QQ-A-250/11.
- 3 FINISH IAW MPP-172, SECTIONS 2.1, 3.1, & 4.2.
- 4 DEBURR AND BREAK ALL SHARP EDGES.
- 5 IDENTIFY IAW MPP-120.
- 6 P/N 647.1701:
CLAMP F/N 1, 2, & 4; THEN MATE AND MATCH DRILL HOLES FROM F/N 1 & 2 ONTO F/N 3 AS SHOWN ON SHEET 2.
- P/N 647.1702:
FOLLOW SAME PROCEDURE FOR P/N 647.1702 USING F/N 9 & 10 IN PLACE OF 1 & 2.
- P/N 647.1703:
FOLLOW SAME PROCEDURE FOR P/N 647.1703 USING F/N 11, 12, & 13 IN PLACE OF F/N 1, 2, & 3, RESPECTIVELY.
- 7 WITH EXCEPTION OF HOLE DIMENSION, ALL DIMENSIONS SAME AS P/N 647.1710 AND P/N 647.1711, RESPECTIVELY.
- 8 FOR P/N 647.1701 ASSEMBLY.
- 9 FOR P/N 647.1702 ASSEMBLY.
- 10 .323" DIA FOR P/N'S 647.1714 & 647.1715
.257" DIA FOR P/N'S 647.1710 & 647.1711
- 11 RIVET SPACING AND ASSEMBLY TYPICAL FOR ALL CONFIGURATIONS.
- 12 FOR P/N 647.1703 ASSEMBLY.
- 13 FOR P/N 647.1701 & 647.1702 ASSEMBLIES.
- 14 FOR P/N 647.1703 ASSEMBLY.



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
N/C	LAST PROTOTYPE REVISION: PR2		N/C
A	INITIAL RELEASE	08/09/09	P. BRAVO
B	INCORPORATED ECN'S 02937 & 03921	06/07/13	P. BRAVO
C	INCORPORATED ECN 03970	07/03/13	P. BRAVO
D	INCORPORATED ECN 04058	08/14/13	P. BRAVO
E	INCORPORATED ECN'S 04679, 04702 & 04964	05/29/15	P. BRAVO

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WITHOUT NOTICE
WORK ORDER
NO 138396 MLS
15-10-29

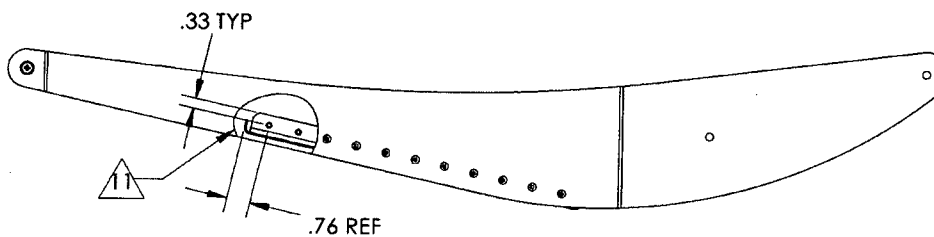
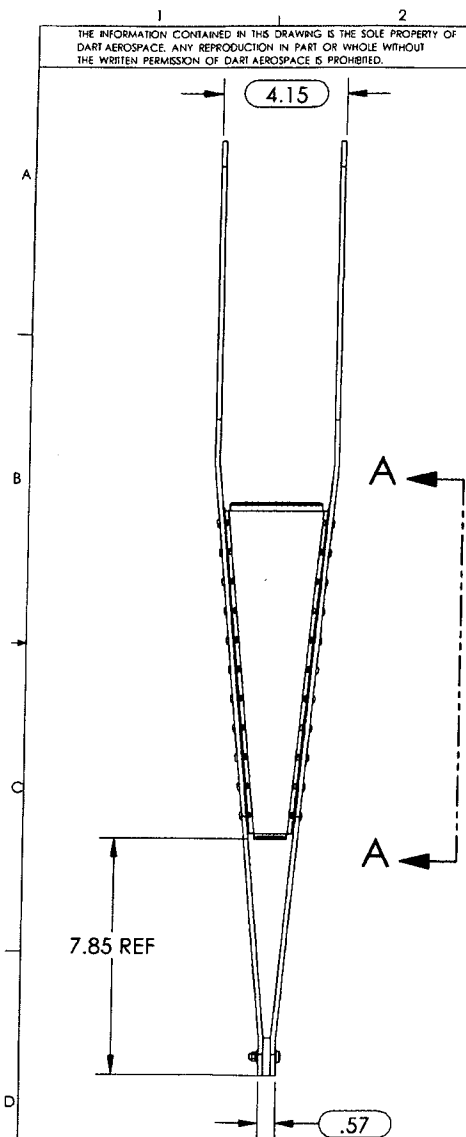
1			13	647.1718	GUSSET		
1			12	647.1717	PLATE		
1			11	647.1716	PLATE		
1			10	647.1715	PLATE		
1			9	647.1714	PLATE		
1	1	1	8	601.1622	SCREW	MS27039-1-14	
1	1	1	7	601.2943	LOCKNUT	MS21042-3	
2	2	2	6	601.1607	WASHER	NAS1149F0332P	
22	22	22	5	601.1915	RIVET	CR3213-4-4	
1	1	1	4	647.1713	SPACER		
1	1	1	3	647.1712	GUSSET		
1	1	1	2	647.1711	PLATE		
1	1	1	1	647.1710	PLATE		
X				647.1703	SKID DEFLECTOR ASSY		
X				647.1702	SKID DEFLECTOR ASSY		
	X			647.1701	SKID DEFLECTOR ASSY		
.1703	.1702	.1701	FIND #	PART #	DESCRIPTION	MAT'L	SPEC.

QTY		PARTS LIST	
NEXT ASSY (S)		ORIGINAL DATE: 08/05/09	
647.1300		DRAWN BY: J. GARDNER	
		CHECKED BY: P. BRAVO	
		DRAWING APPROVAL: P. BRAVO	
		CONTRACT NO.	
		UNLESS OTHERWISE SPECIFIED	
		DIMENSIONS ARE IN INCHES	
		TOLERANCES ARE:	
		2 PLACE DECIMALS ±.01	
		3 PLACE DECIMALS ±.005	
		ANGLES ± .5°	
		SHEET (CAGE CODE) 07MZ6	
		DWG. NO. 647.1700	
		SCALE NONE	
		REV. D	
		SHEET 1 OF 7	

DART AEROSPACE
3030 ENTERPRISE CT., SUITE A
VISTA, CA. 92081
(760) 724-5300

SKID DEFLECTOR ASSY

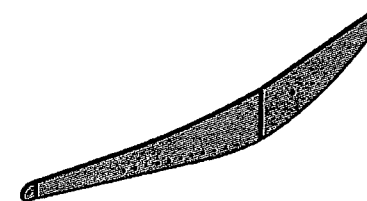
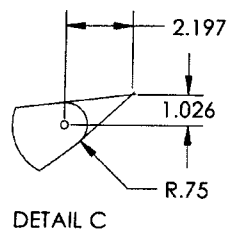
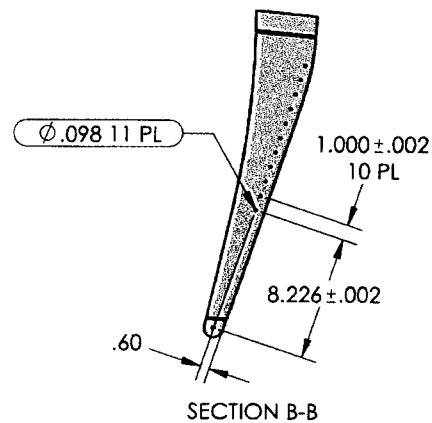
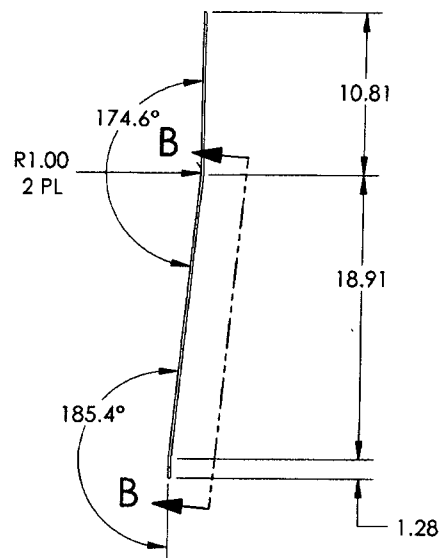
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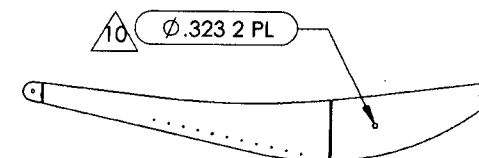
SECTION A-A

ORIGINAL DATE 2/20/04		08/05/09	
DRAWN BY J. GARROWER		CHECKED P. BRAVO	
DRAWING APPROVAL P. BRAVO			
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°			
DART AEROSPACE 3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760) 724-5300		APICAL INDUSTRIES, INC. ©2005 DART AEROSPACE	
SKID DEFLECTOR ASSY			
SIZE B	CAGE CODE 07M26	DWG. NO. 647.1700	REV. D
SCALE NONE		SHEET 2 OF 7	

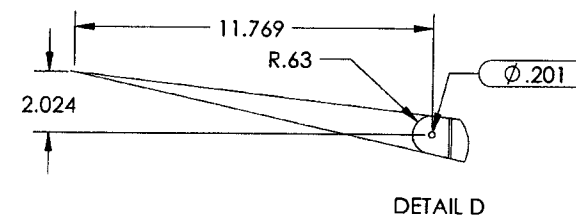
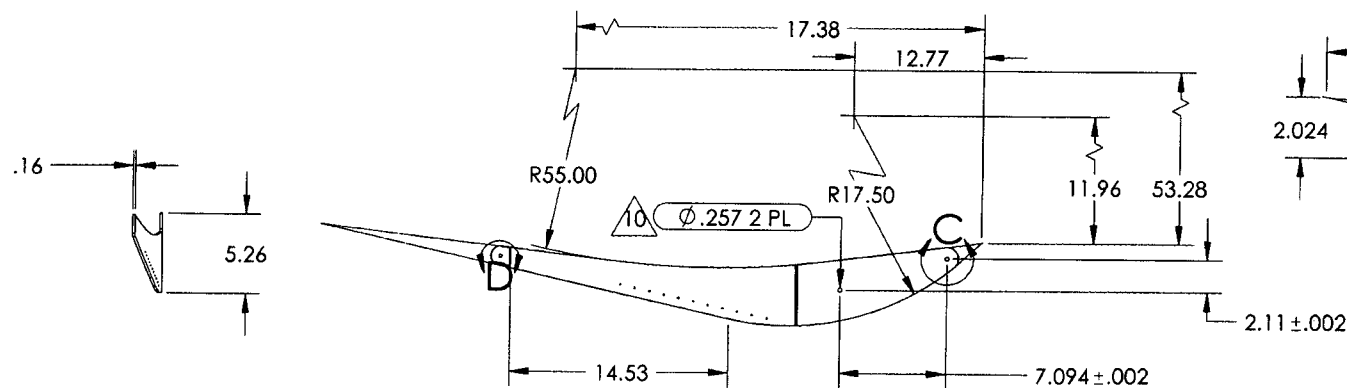
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647.1711 SHOWN
647.1710 OPPOSITE

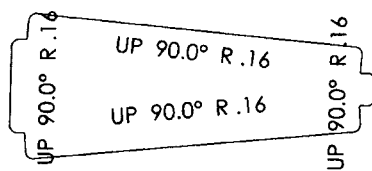
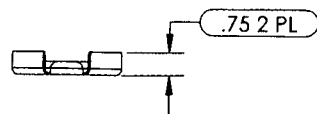
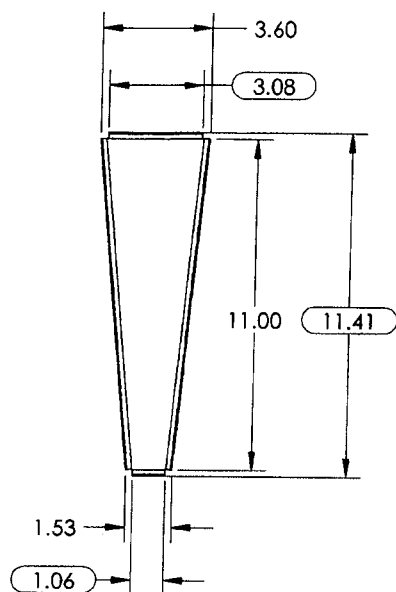


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647.1715 OPPOSITE

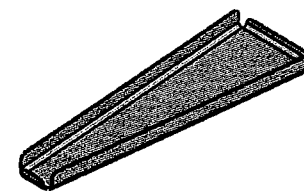
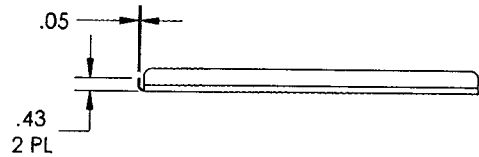
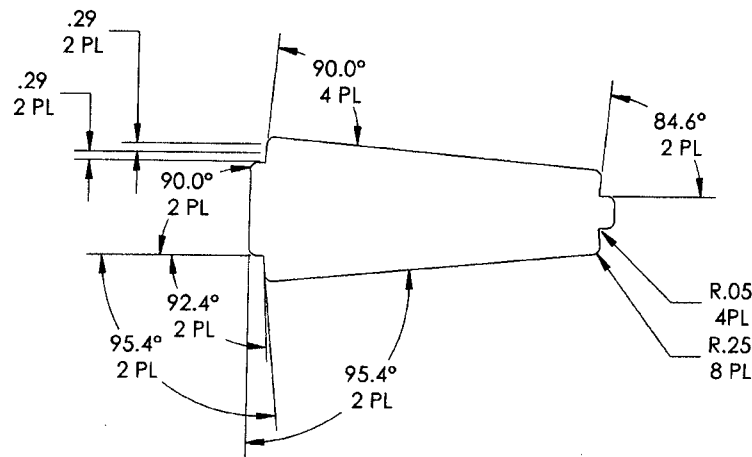


ORIGINAL DATE (MM/DD/YY) 08/05/09		3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760) 691-9108	
DRAWN BY J. CARDNER	CHECKER P. BRAVO	DART AEROSPACE APCAL INDUSTRIES, INC. 690 DART AEROSPACE	
DRAWING APPROVAL P. BRAVO			
CONTRACT NO.		SKID DEFLECTOR ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS $\pm .01$ 3 PLACE DECIMALS $\pm .005$ ANGLES $\pm .5^\circ$		SIZE B	QTY 07M16
		OWG. NO. 647.1700	REV. D
		SCALE: NONE	SHEET 3 OF 7

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FLAT PATTERN



647.1712

ORIGINAL DATE (MM-DD-YY) 08/05/09		CHECKED J. GARDNER		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760) 724-5300	
DRAWN BY J. GARDNER		P. BRAVO		DART AEROSPACE	
DRAWING APPROVAL P. BRAVO				APICAL INDUSTRIES INC. c/o DART AEROSPACE	
CONTRACT NO.				SKID DEFLECTOR ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SHEET B	CAGE CODE 07M26	DWG. NO. 647.1700	REV. D
SCALE NONE				SHEET 4 OF 7	

1 2 3 4 5 6 7 8

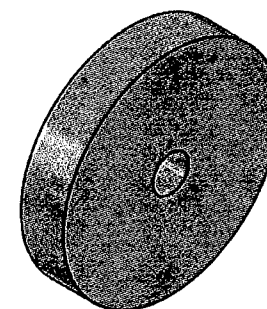
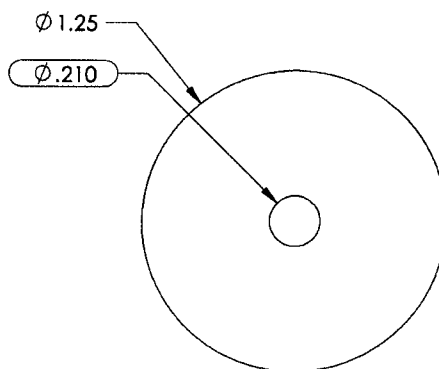
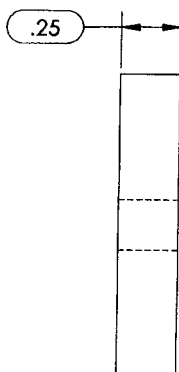
A

B

C

D

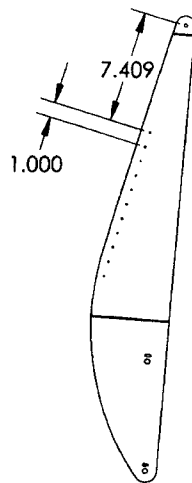
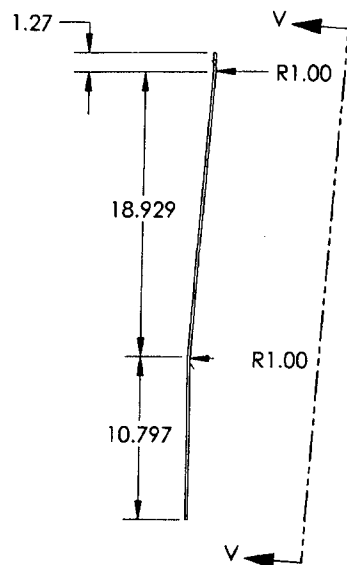
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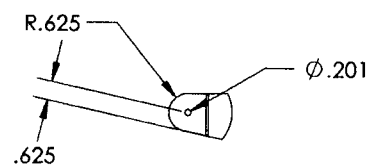
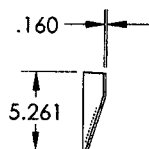
647.1713

ORIGINAL DATE (MM-DD-YY) 08/05/09		3030 ENTERPRISE CT. SUITE A VISTA, CA 92081 (760)724-5300	
DRAWN BY J. GARDNER		CHECKER P. BRAVO	
DRAWING APPROVAL P. BRAVO		APICAL INDUSTRIES, INC. DART AEROSPACE	
CONTRACT NO.		SKID DEFLECTOR ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5		SHEET 8	REV. D
CAGE CODE 07AM26		DWG. NO. 647.1700	
SCALE NONE		SHEET 5 OF 7	

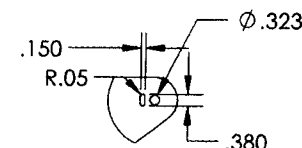
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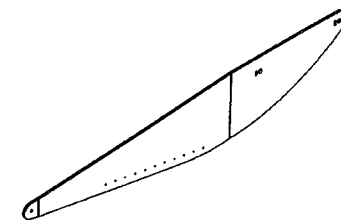
VIEW V-V



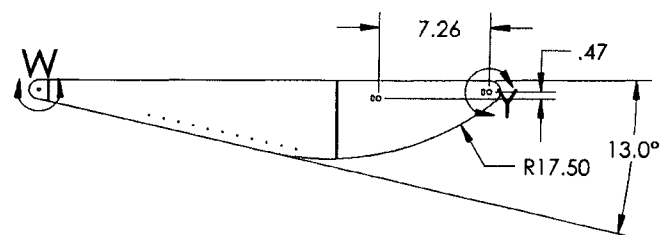
DETAIL W



DETAIL Y
TYP 2 PL



647.1716 SHOWN
647.1717 OPPOSITE

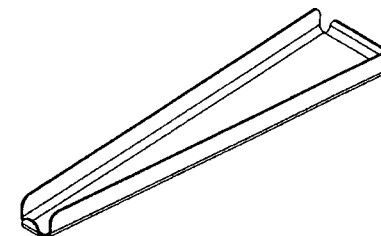
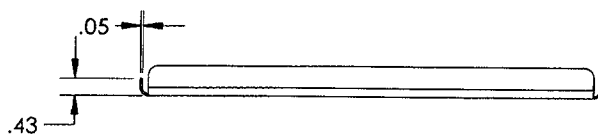
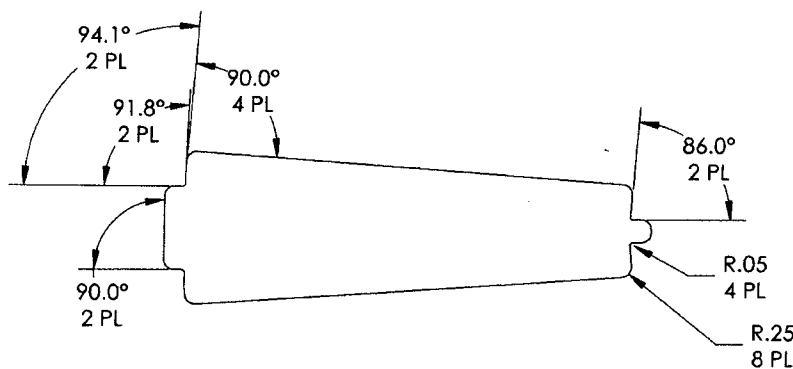
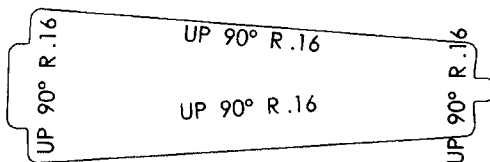
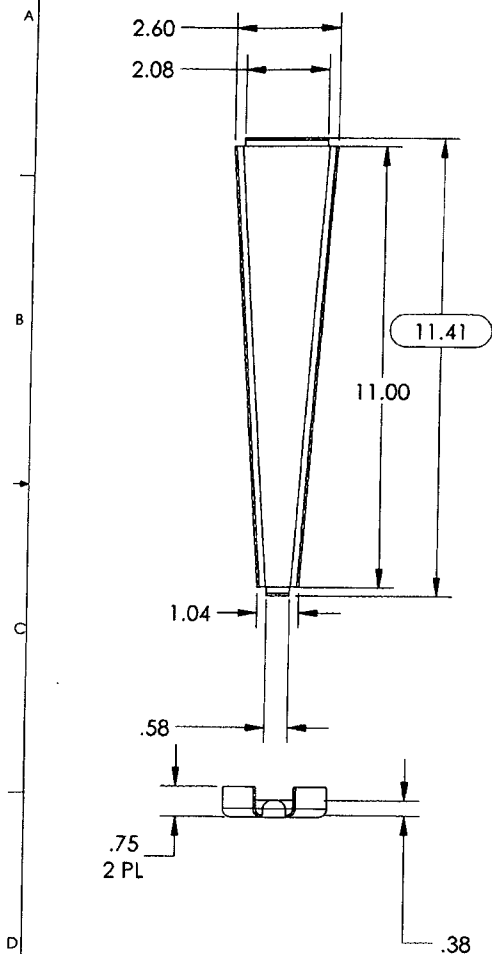


ORIGINAL DATE (MM-DD-YY) 08-01-09		DRAWN BY S. HUP		CHECKED BY P. BRAVO	
DRAWING APPROVAL P. BRAVO		DESIGNED BY		CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°					
SITE B		CAGE CODE 07M16		DWG. NO. 647.1700	
SCALE NONE		REV. D		SHEET 6 OF 7	

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647.1718

ORIGINAL DATE (MO-DA-YR) 08-05-09		DART 3030 ENTERPRISE CT. AEROSPACE SUITE A VISTA CA. 92081 (760) 724-5300	
DRAWN BY S. HUFF	CHECKER P. BRAVO	AFICAL INDUSTRIES, INC. (DOD) DART AEROSPACE	
DRAWING APPROVAL P. BRAVO		SKID DEFLECTOR ASSY	
CONTRACT NO.		SIZE B	REV. D
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.01 2 PLACE DECIMALS ±.005 ANGLES ±.5°		CAGE CODE 07M76	DWG. NO. 647.1700
SCALE NONE		SHEET 7 OF 7	